Fig 1A

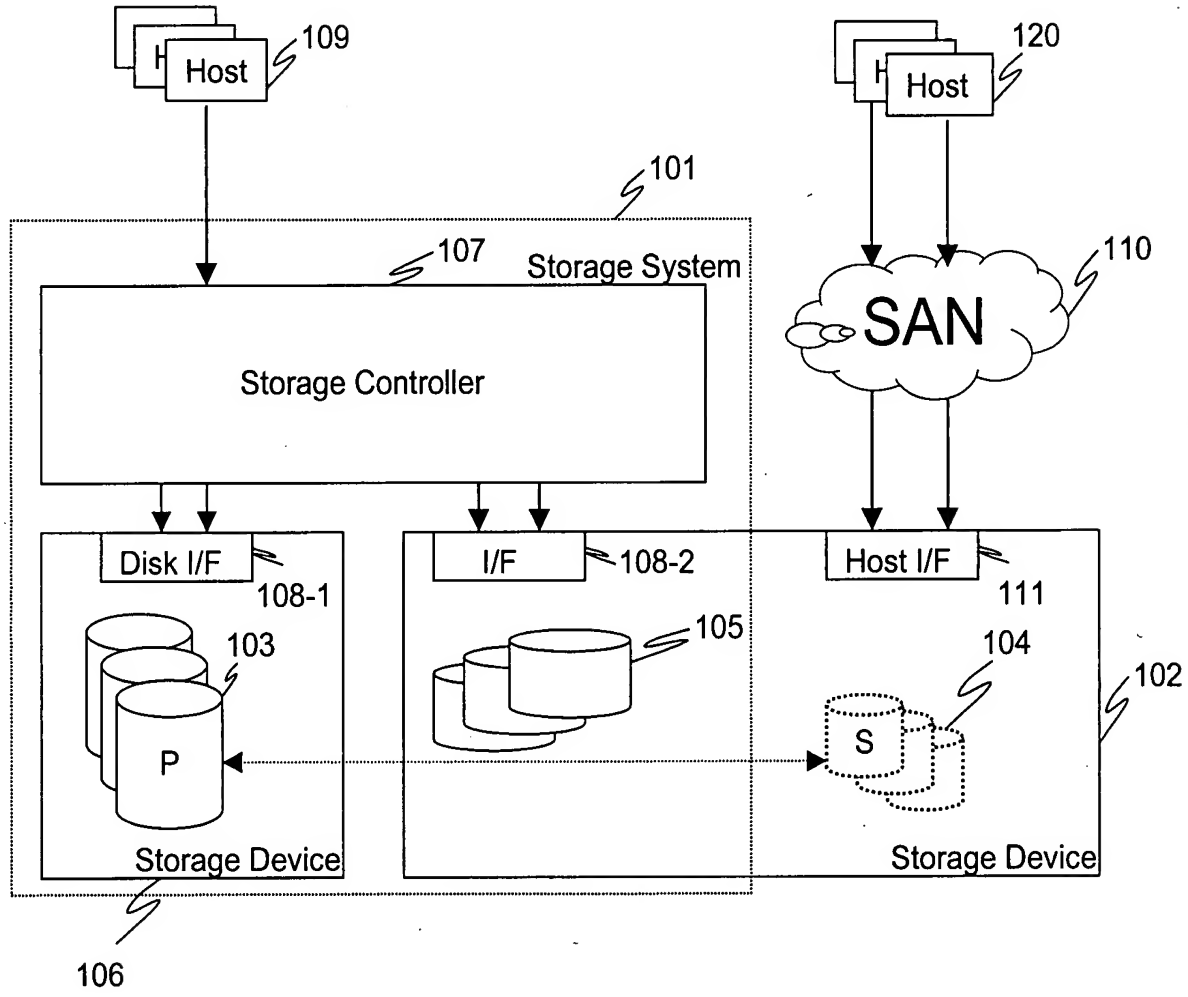

Host
109
Host
120
101
107
Storage System
110
SAN
Storage Controller
Disk I/F
108-1
I/F
108-2
Host I/F
111
103
105
104
102
P
S
Storage Device
Storage Device
106

Fig 1B

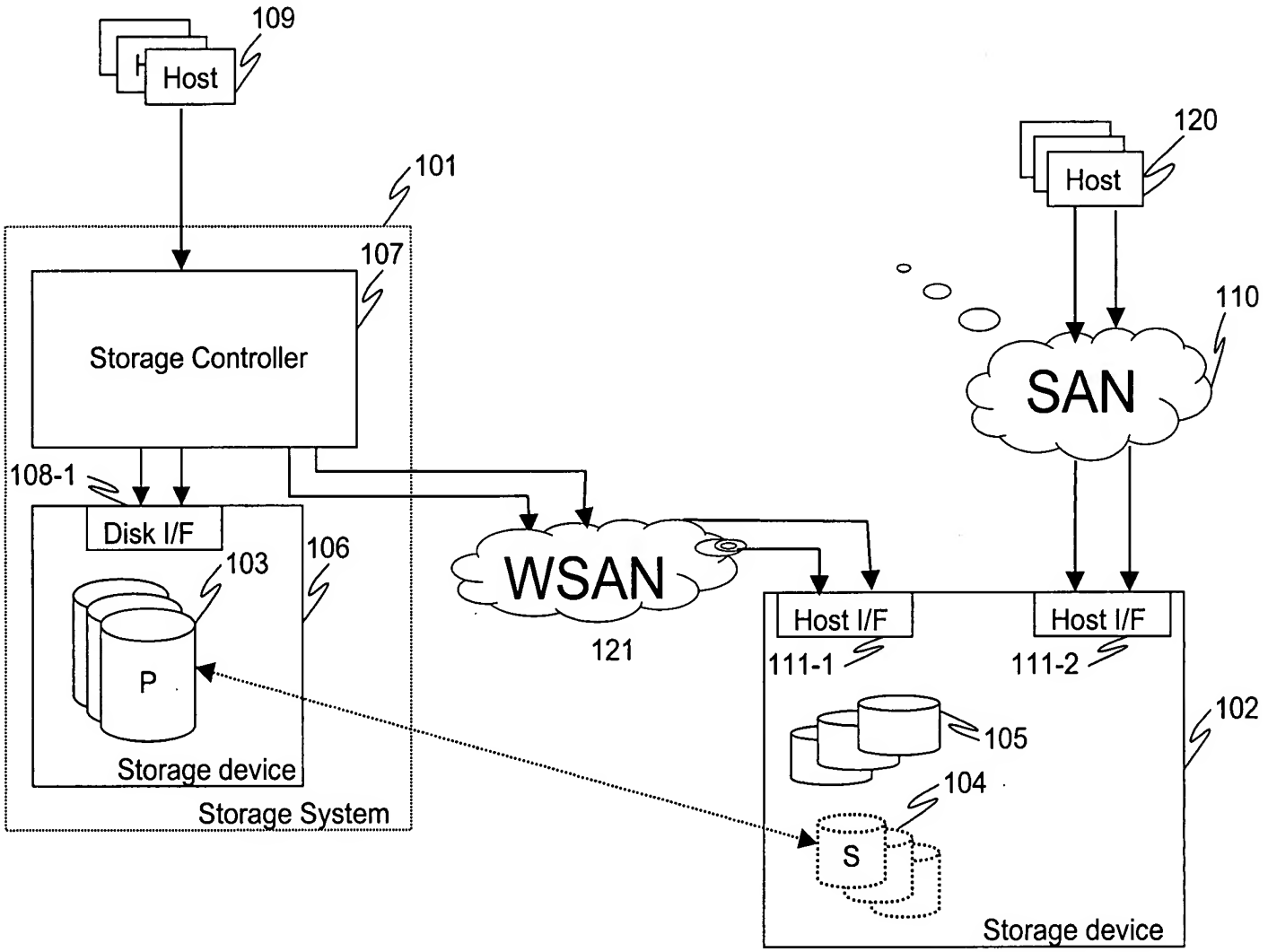

109
Host
101
107
Storage Controller
108-1
Disk I/F
103
106
P
Storage device
Storage System
WSAN
121
120
Host
110
SAN
Host I/F
Host I/F
111-1
111-2
102
105
104
S
Storage device

Fig 2

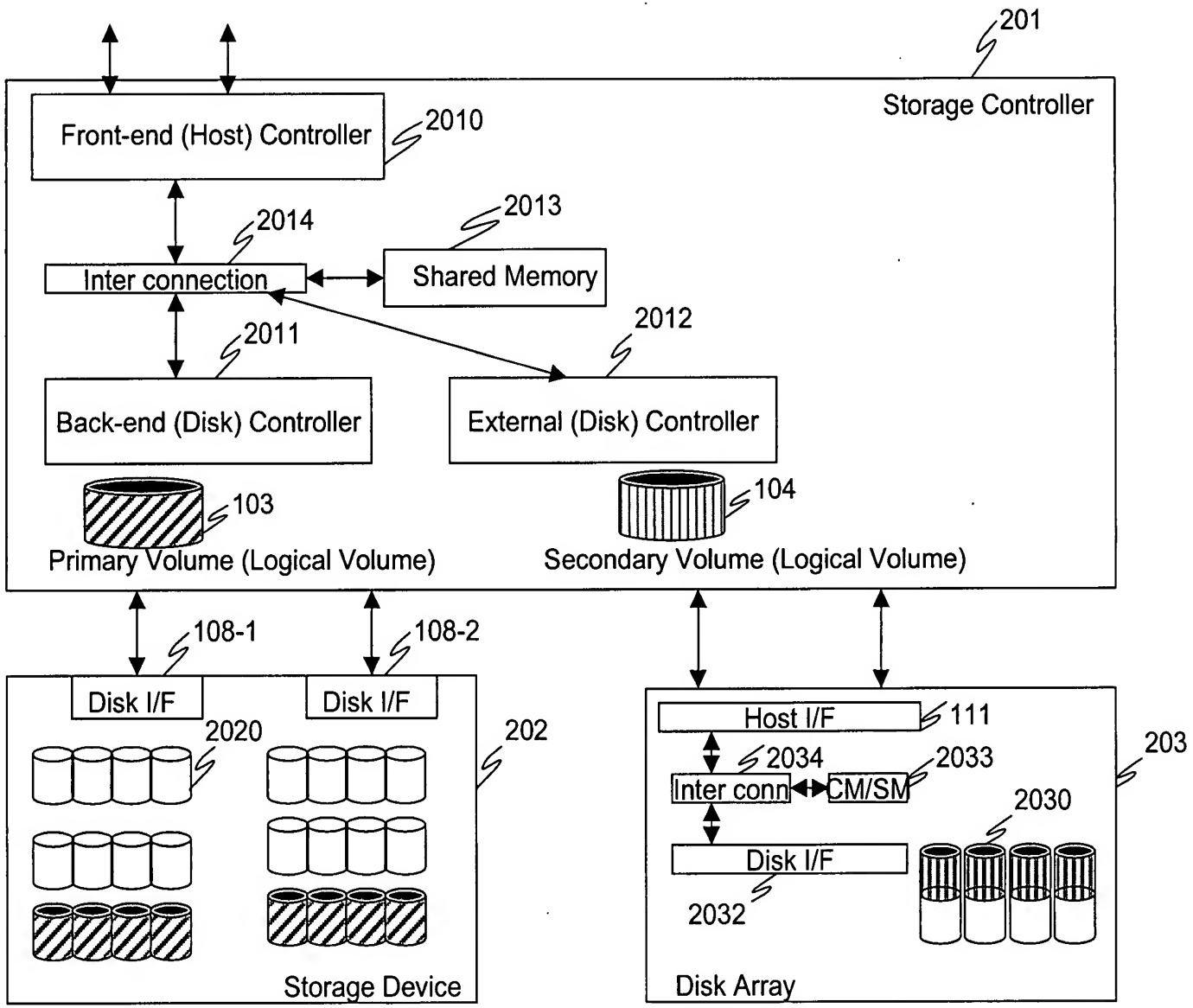

201
Storage Controller
Front-end (Host) Controller
2010
2014
2013
Inter connection
Shared Memory
2011
2012
Back-end (Disk) Controller
External (Disk) Controller
103
104
Primary Volume (Logical Volume)
Secondary Volume (Logical Volume)
108-1
108-2
Disk I/F
Disk I/F
2020
202
Storage Device
Host I/F
111
2034
2033
Inter conn
CM/SM
2030
Disk I/F
2032
203
Disk Array

Fig 3

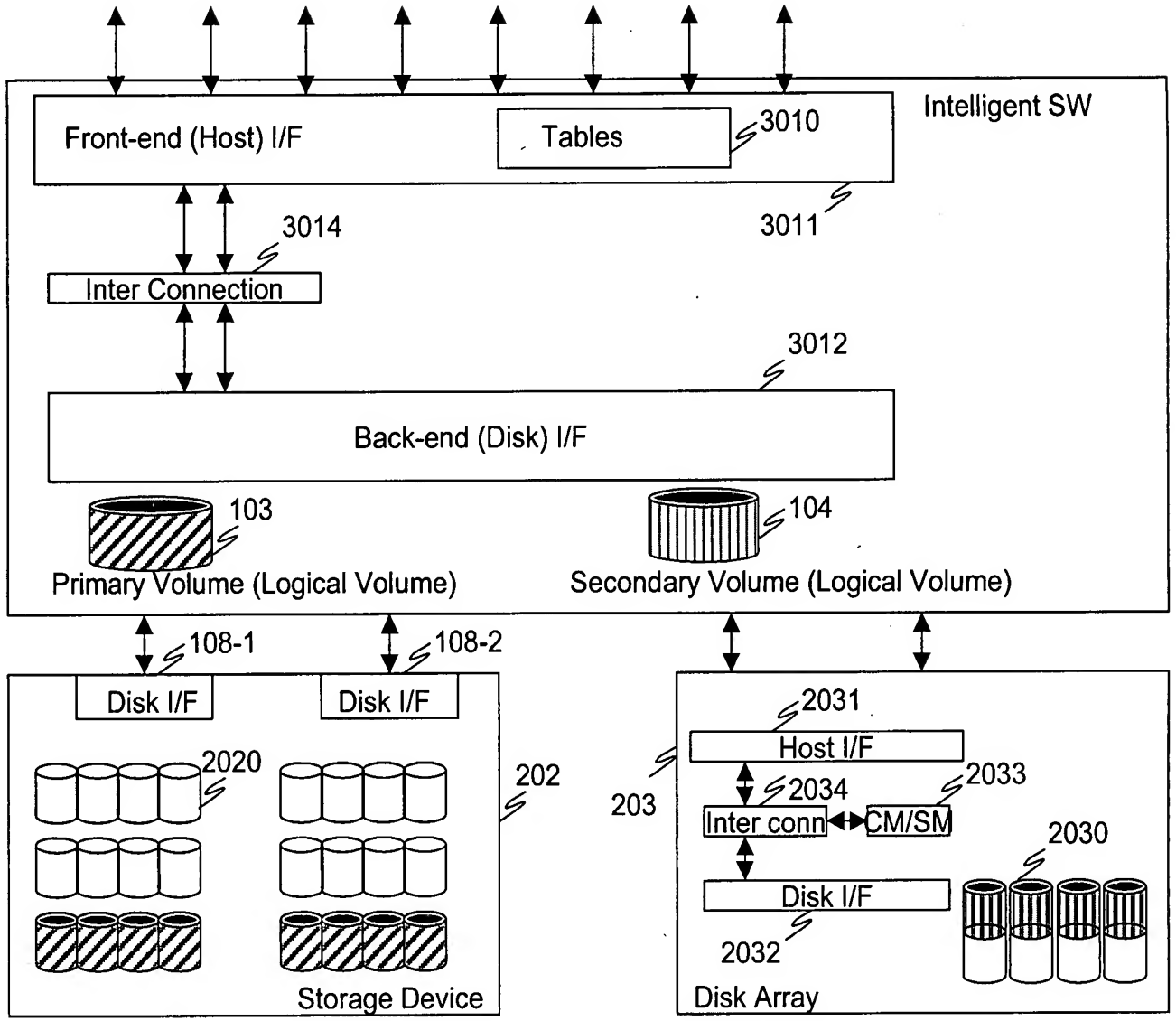

Intelligent SW
Front-end (Host) I/F
Tables
3010
3011
3014
Inter Connection
3012
Back-end (Disk) I/F
103
Primary Volume (Logical Volume)
104
Secondary Volume (Logical Volume)
108-1
108-2
Disk I/F
Disk I/F
2020
202
Storage Device
203
2031
Host I/F
2034
2033
Inter conn
CM/SM
2030
Disk I/F
2032
Disk Array

Fig 4

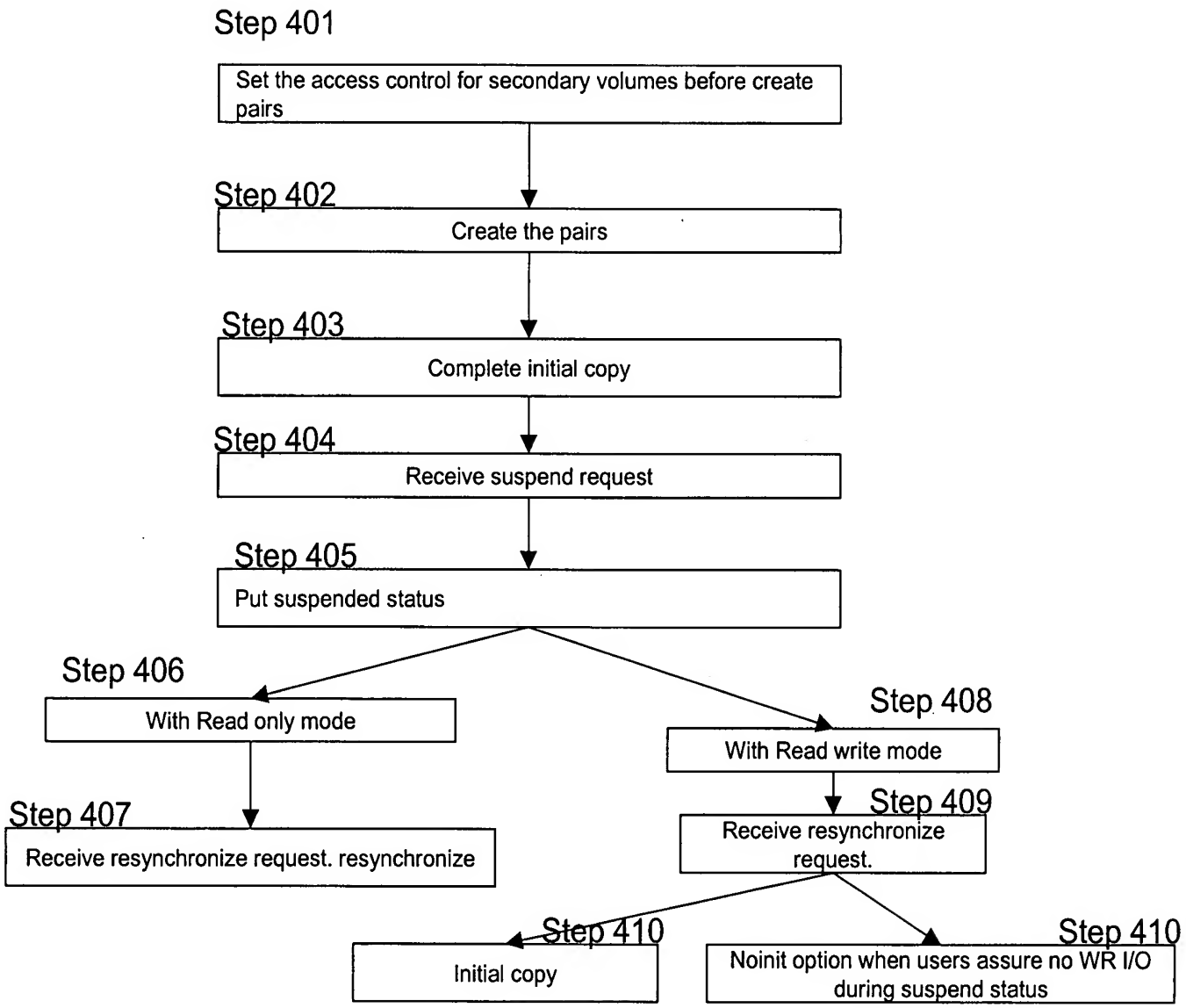

Step 401
Set the access control for secondary volumes before create pairs
Step 402
Create the pairs
Step 403
Complete initial copy
Step 404
Receive suspend request
Step 405
Put suspended status
Step 406
With Read only mode
Step 407
Receive resynchronize request. resynchronize
Step 408
With Read write mode
Step 409
Receive resynchronize request.
Step 410
Initial copy
Step 410
Noinit option when users assure no WR I/O during suspend status

Fig 5

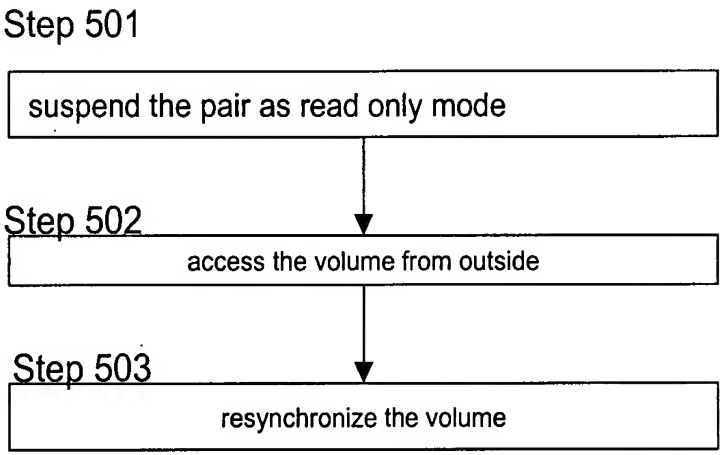
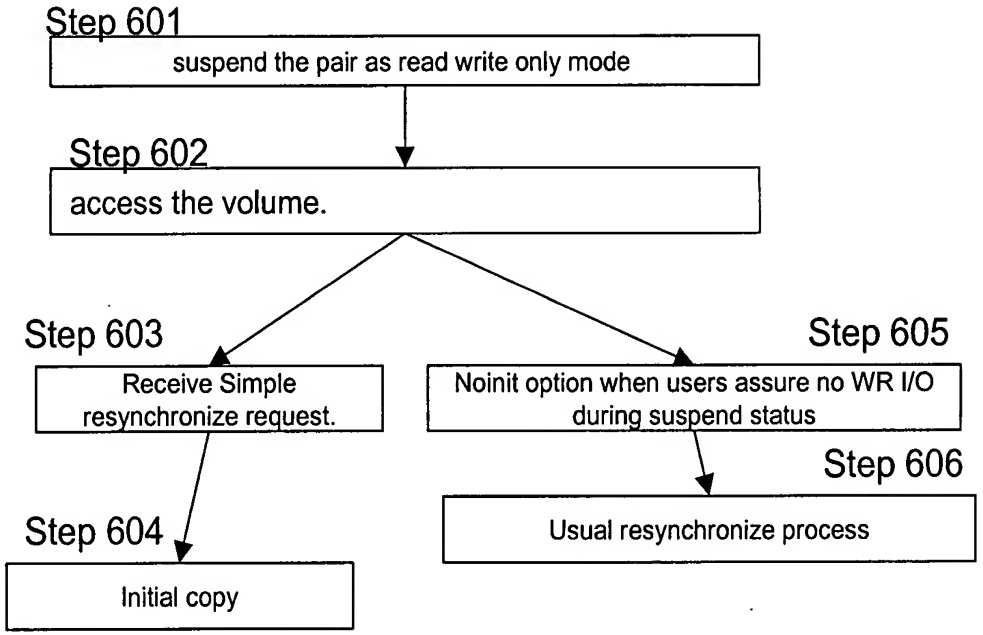

Step 501
suspend the pair as read only mode
Step 502
access the volume from outside
Step 503
resynchronize the volume

Fig 6


Step 601
suspend the pair as read write only mode
Step 602
access the volume.
Step 603
Receive Simple resynchronize request.
Step 605
Noinit option when users assure no WR I/O during suspend status
Step 606
Usual resynchronize process
Step 604
Initial copy